

**BY ORDER OF THE COMMANDER
CHARLESTON AIR FORCE BASE**

**CHARLESTON AIR FORCE BASE
INSTRUCTION 21-101**



16 FEBRUARY 2010

Maintenance

***FUNCTIONAL/OPERATIONAL CHECK
FLIGHT AND HIGH SPEED TAXI CHECK***

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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RELEASABILITY: There are no releasability restrictions on this publication.

OPR: 437 MXG/QA

Supersedes: CHARLESTONAFBI 21-
101, 11 April 2005

Certified by: 437 MXG/CC
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Pages: 5

This Instruction establishes policy, assigns responsibilities, and outlines procedures for implementing and maintaining an effective Functional Check Flight (FCF), Operational Check Flight (OCF), and High Speed Taxi Check Program within the Maintenance Group (MXG) and Operations Group (OG). Commanders, maintenance officers, work center supervisors, and maintenance personnel will ensure compliance with this directive. References are AFI 21-101 and AFI 21-101_ AMC Supplement 1, *Aircraft and Equipment Maintenance Management*; AFI 11-401, *Aviation Management*; AFI 11-202V3, *General Flight Rules*; AFI 13-201, *Airspace Management*; Technical Order (TO) 1-1-300, *Acceptance/Functional Check Flight and Maintenance Operational Checks*; TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policy and Procedures*; TO 1C-17A-6CL-1, *Acceptance and/or Functional Check Flight Checklist*; TO 1C-17A-6, *Inspection Requirements Manual*; TO 1C-17A -1, *Flight Manual*, and AFI 11-202V2, Chapter 9, CAFB Sup 1, *Process Guide*, Chapter 22. Ensure that all records created as a result of processes prescribed in this publication are maintained In Accordance With (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW with the Air Force Records Information Management System (AFRIMS) located at <https://www.my.af.mil/gcss-af61a/afirms/afirms/>. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through the appropriate functional's chain of command.

SUMMARY OF CHANGES

This publication has been revised changes Paragraph 6.1.1 change AFI 21-101, Chapter 10 to AFI 21-101, Chapter 8, added 10. Prescribed and Adopted Forms, 10.1. Prescribed Forms: No forms prescribed. 10.2. Adopted Forms: AF Form 847, *Recommendation for Change of Publication*.

1. General Procedures.

1.1. The 437th Maintenance Group Commander (MXG/CC) and 437th Operations Group Commander (OG/CC) have joint responsibility for effective management of the installation FCF/OCF Programs. The success of this program relies on cooperation between the maintenance and operations communities. The Maintenance Group Quality Assurance (QA) FCF manager and the OG FCF officer in charge (OIC) collaborate to ensure a viable program. The OG/CC will designate an FCF/OIC.

2. Functional Check Flight Procedures.

2.1. Boeing flight crews, under the current Flex Sustainment Contract, or designated 437th Airlift Wing crews will fly any FCF required for C-17 aircraft at Charleston AFB.

2.2. Plans, Scheduling and Documentation (PS&D) will apply for FCF Boeing crews using an expedited 107, or coordinate with the 437th Airlift Wing FCF/OIC once the maintenance group determines an FCF is required.

2.3. Follow weather conditions contained in TO 1-1-300 at all times unless aircraft are urgently required for operational commitments or waivers outlined in TO 1-1-300.

2.4. No other checks are to coincide with FCFs.

3. Operational Check Flight Procedures.

3.1. No Aircrew Guidance-1, Maintenance Guidance-2 or Inspection Guidance-6 requirements for C-17 aircraft exist; therefore, operational check flights are not performed.

4. In-flight Operational Checks.

4.1. Maintenance must document the reason for in-flight operational checks.

4.2. Will be performed when test equipment does not exist to perform the operational check on the ground.

4.3. If maintenance determines an aircraft system requires an in-flight operational check, PS&D will schedule through OG or aircraft commander.

4.4. Maintenance will brief crew prior to launch to give history of discrepancy requiring operational check.

5. High Speed Taxi Check Procedures.

5.1. Will be performed by FCF-qualified crews utilizing TO 1C-17A-6CL-1 guidance.

6. MXG Responsibilities.

6.1. QA FCF Manager will:

- 6.1.1. Comply with all responsibilities that pertain to C-17 FCFs handled by Boeing or 437th Airlift Wing crews, as stated in AFI 21-101, Chapter 8.
- 6.1.2. Ensure an adequate number of personnel within the QA Inspection Section are familiar with the FCF program and procedures.
- 6.1.3. Retain a historical copy of AMC IMT 41, *Flight Authorization*, for all FCFs flown locally.
- 6.1.4. Deliver a copy of AMC IMT 41 to PS&D along with checklist for review.
- 6.1.5. Be available for debrief to clear FCF with aircraft commander.
- 6.2. Plans, Scheduling, and Documentation (PS&D) will:
 - 6.2.1. Ensure checklist is delivered for history.
 - 6.2.2. Establish a POC for all FCF issues.
 - 6.2.3. Ask for configuration requirements (floor, fuel, lox, etc) through the C-17 System Programs Office (SPO).
 - 6.2.4. Call in Maintenance Data Collection (MDC) and load FCF job number as required.
 - 6.2.5. Schedule the date/time/location for a FCF pre-briefing. Notify all attendees to include FCF Program Manager, Aircraft Maintenance Unit (AMU) representative, aircrew, and Stan Eval representative.
 - 6.2.6. Ensure a qualified flight crew is available and scheduled to fly the FCF as needed.
 - 6.2.7. Ensure only the FCF is scheduled on that sortie. No other training can be accomplished during the FCF.
- 6.3. Aircraft Maintenance Squadron (AMXS)/Maintenance Squadron (MXS) will:
 - 6.3.1. Establish a POC for all FCF issues.
 - 6.3.2. Ensure all forms are documented correctly IAW TO 1C-17A-6 and TO 00-20-1.
 - 6.3.3. Review TO 1C-17A-6, chapter 2, to determine when any completed modifications or maintenance/repair actions necessitate a FCF. Example: 3 engine changes, 3 fuel controls, 3 gearboxes, etc.
 - 6.3.4. Notify QA immediately upon discovery that an FCF is necessary. Notification will include the circumstances and conditions driving the action, so proper planning can be accomplished.
 - 6.3.5. Have maintenance representatives, from the aircraft owning AMU, available for pre-brief of crew and ensure all questions are answered pertaining to why FCF is required.
 - 6.3.6. Configure the aircraft as required. Only a clean configuration is allowed.
- 6.4. Maintenance Operations Center (MOC) will:
 - 6.4.1. Call QA upon the return of an FCF.
 - 6.4.2. Call QA to advise of crew show at FCF aircraft.

6.4.3. Call QA if any reason FCF resulted in abort, IFE, etc.

6.4.4. Load job number in G0-81 for FCF or in-flight operations check.

7. OG Responsibilities.

7.1. OG/CC appoints an OIC for management and administration of the FCF program. 437th OG/OGV is appointed the OIC role.

7.2. If required by maintenance due to a lack of test equipment, experienced crews will fly in-flight operational checks. This will only be accomplished if no valid way exists to perform an operational check on the ground.

8. Stan Eval Will.

8.1. 437th OG/OGV will ensure that all flight crew members identified as FCF crewmembers have received training in roles and responsibilities of operations and maintenance personnel during FCF operations.

9. Aircrews Will.

9.1. Follow guidance located in AFI 11-202V2, Chapter 9, Charleston AFB Sup 1, *Process Guide*, Chapter 22, when completing any FCF operation.

10. Prescribed and Adopted Forms:

10.1. Prescribed Forms:

No forms prescribed.

10.2. Adopted Forms:

AF Form 847, *Recommendation for Change of Publication*

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Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 11-202V2_AMCSUP_I, *Aircrew Standardization/Evaluation Program*, 24 August 2007

AFI 11-202V3, *General Flight Rules*, 5 April 2006

AFI 11-401, *Aviation Management*, 7 March 2007

AFI 13-201, *Air Force Airspace Management*, 1 December 2006

AFI 21-101_AMC_SUP_1, *Aircraft and Equipment Maintenance Management*, 1 January 2008

Abbreviations and Acronyms

AMU— Aircraft Maintenance Unit

AMXS— Aircraft Maintenance Squadron

FCF— Functional Check Flight

MDC— Maintenance Data Collection

MOC— Maintenance Operations Center

MXS— Maintenance Squadron

OCF— Operational Check Flight

PS&D— Plans, Scheduling, and Documentation

QA— Maintenance Group Quality Assurance

SPO— System Programs Office

TO— Technical Order